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# FEDERAL - STATE - PRIVATE COOPERATIVE

# SNOW SURVEY and WATER SUPPLY FORECASTS for COLORADO and NEW MEXICO

UNITED STATES DEPARTMENT of AGRICULTURE...SOIL CONSERVATION SERVICE and

COLORADO AGRICULTURAL EXPERIMENT STATION, STATE ENGINEER of COLORADO and STATE ENGINEER of NEW MEXICO

Data included in this report were obtained by the agencies named above in cooperation with the Bureau of Reclamation, U.S. Forest Service, National Park Service and other Federal, State, and private organizations.

MAY 1, 1961

#### UNITED STATES DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

To Recipients of Cooperative Snow Survey and Water Supply Forecast Reports:

The climate of the cultivated and populated areas of the West is characterized by relatively dry summer months. Such precipitation as occurs falls mostly in the winter and early spring months when it is of little immediate benefit to growing crops. Fortunately, most of this precipitation falls as mountain snow which stays on the ground for months, melting later to sustain streamflow during the period of greatest demand during late spring and summer. Thus, nature provides in mountain snow an imposing water storage facility.

The amount of water stored in mountain snow varies from place to place as well as from year to year and accordingly, so does the runoff of the streams. The best seasonal management of variable western water supplies results from fore-knowledge of the runoff.

A snow survey consists of a series of about ten samples taken with specially designed snow sampling equipment along a permanently marked line, about 1000 feet in length, called a snow course. The use of snow sampling equipment provides snow depth and water equivalent values for each sampling point. The average of these values is reported as the snow survey measurement for a snow course.

Snow surveys are made monthly or semi-monthly beginning in January or February and continue through the snow season until April, May or June. Currently more than 1400 western snow courses are measured each year. These measurements furnish the key data for water supply forecasts.

By relating snow survey measurements taken over a period of years to spring-summer runoff during the same period, relationships have been developed which make it possible to forecast seasonal runoff several months in advance of occurrence. In order to make a forecast, once a forecast relationship has been developed, the maximum snow water content at previously selected key snow courses is usually entered in the forecast relationship. More accurate forecasts are often obtained when other factors such as soil moisture, base flow and spring precipitation are considered and included in the forecast relationships.

Listed below are the Federal-State-Private Cooperative Snow Survey and Water Supply Forecast reports available for the West which contain detailed information on snow survey measurements, streamflow forecasts, reservoir storage, soil moisture and other guide data to water management and conservation decisions.

#### PUBLISHED BY SOIL CONSERVATION SERVICE

REPORTS	ISSUED	LOCATION	COOPERATING WITH
RIVER BASINS			
COLORADO ANO STATE OF UTAH -	MONTHLY (JANMAY)		UTAH STATE ENGINEER AND OTHER AGENCIES
COLUMBIA	MONTHLY (JANMAY)	BOISE, IOAHO	TOAHO STATE RECLAMATION ENGINEER
UPPER MISSOURI AND STATEOF MONTANA	MONTHLY (FEBMAY)	BOZEMAN MONTANA	MONT. AGR. EXP. STATION
WEST-WIDE	OCT. 1, APR. 1, MAY 1_	PORTLANO, OREGON	ALL COOPERATORS
TATES			
ALASKA	MONTHLY (MARMAY)	PALMER, ALASKA	ALASKA S.C.D.
AR I ZON A	SEMI-MONTHLY (JAN.15 - APR.1)	PHOENIX, ARIZONA	SALT R. VALLEY WATER USERS ASSOC. ARIZ. AGR. EXP. STATION
COLORADO AND NEW MEXICO	MONTHLY (FEBMAY)	FORT COLLINS, COLORADO	COLO. AGR. EXP. STATION COLO. STATE ENGINEER N. MEX. STATE ENGINEER
IDAHO	MONTHLY (FEBMAY)	BOISE, IOAHO	TOAHO STATE RECLAMATION ENGINEER
NEVA O A	MONTHLY (FEBAPR.)	. RENO. NEVADA	NEVAGA DEPT. OF CONSERVATION AND NATURAL RESOURCES DIVISION OF WATER RESOURCES
OREGON	MONTHLY (JANMAY)		ORE. AGR. EXP. STATION OREGON STATE ENGINEER
WASHINGTON	MONTHLY (FEBMAY)	SPOKANE, WASHINGTON	Wn. STATE DEPT. OF CONSERVATION
WYOMING	MONTHLY (FEB. JUNE)	. CASPER. WYOMING	WYOMING STATE ENGINEER
Copies of these various repo	rts may be secured from:	Head, Water Supply Forect Soil Conservation Servic 209 S. W. Fifth Ave., Po	e.
	PUBLISHED BY	OTHER AGENCIES	
REPORTS	ISSUED		AGENCY
BRITISH COLUMBIA	MONTHLY (FEBJUNE)	COMPTROLLER, WATER FORESTS, PARLIAMEN	RIGHTS BR., DEPT. OF LANDS AND T BLOG., VICTORIA, B.C., CANADA

\_ CALIF. DEPT. OF WATER RESOURCES, SACRAMENTO, CALIF.

MONTHLY (FEB.-MAY)\_\_\_\_\_

CALIFORNIA \_

#### FEDERAL-STATE COOPERATIVE

#### SNOW SURVEYS AND WATER SUPPLY FORECASTS

for

COLORADO RIVER, PLATTE RIVER ARKANSAS RIVER AND RIO GRANDE DRAINAGE BASINS

> Issued May 1, 1961

Report Prepared By
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and
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United States Department of Agriculture
Soil Conservation Service
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Colorado Agricultural Experiment Station
Fort Collins, Colorado
and
State Engineer of Colorado
Denver, Colorado
and
State Engineer of New Mexico
Santa Fe, New Mexico

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Kenneth W. Chalmers State Conservationist Soil Conservation Service

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J. E. Whitten State Engineer State of Colorado

S. E. Reynolds State Engineer State of New Mexico

General Series Paper No. 741 Colorado Agricultural Experiment Station AS OF

#### MAY 1, 1961

#### SNOW COVER

SNOW FALL ON THE SOUTH PLATTE AREA DURING APRIL WAS ABOVE NORMAL. MOST OTHER AREAS RECEIVED ABOUT A NORMAL SNOW FALL. THE PATTERN REMAINS THE SAME AS LAST MONTH. HIGH ELEVATION SNOW IS DEFICIENT WHILE MEDIUM TO LOW ELEVATION SNOW IS ABOUT NORMAL. SNOW PACK IS NOW APPROACHING NORMAL THROUGHOUT THE STATE.

#### SOIL MOISTURE

WARM WEATHER HAS STARTED THE SPRING SNOW MELT AND MOUNTAIN SOILS ARE GENERALLY WET. THERE ARE SEVERAL EXCEPTIONS. THE MOST STRIKING AREA IS THE SOUTH PLATTE WHERE PRACTICALLY NO SNOW MELT HAS TAKEN PLACE. THIS WILL OFFSET THE GOOD SNOW IN THIS AREA AND REDUCE THE RUNOFF. VALLEY SOIL MOISTURE THROUGHOUT THE TWO STATES IS REPORTED AS FAIR TO GOOD.

#### RESERVOIR STORAGE

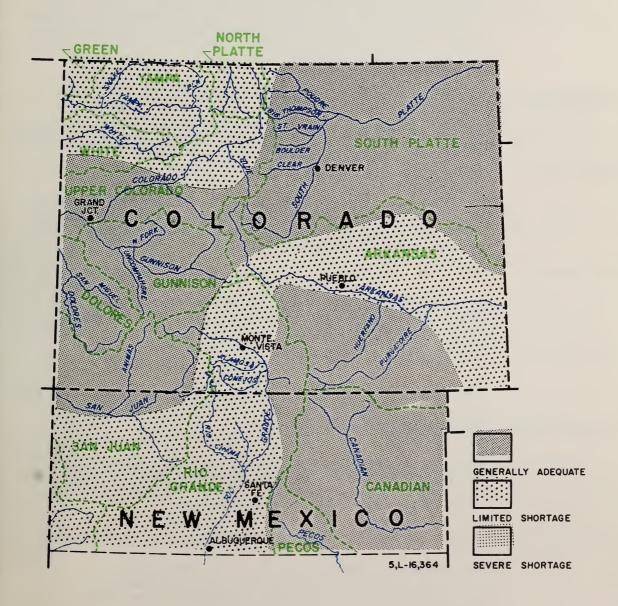
CARRYOVER STORAGE ON THE SOUTH PLATTE IN COLORADO AND THE PECOS AND CANADIAN IN NEW MEXICO IS EXCELLENT. THE RESERVOIRS IN THE TWO ABOVE BASINS IN NEW MEXICO ARE RUNNING OVER. WHILE STORAGE ON THE SOUTH PLATTE IS NOT THIS GOOD, IT WILL BE AN EXCELLENT SUPPLEMENTAL SUPPLY. STORAGE ON THE ARKANSAS BASIN IS PRACTICALLY NIL. OTHER WATERSHEDS OF THE TWO STATES ARE SIMILAR TO LAST YEAR, BUT BELOW NORMAL. THE LOWER RIO GRANDE IS VERY DEFICIENT IN CARRYOVER STORAGE.

#### STREAMFLOW

SEASONAL FORECASTS, OR APRIL-SEPTEMBER FORECASTS, WILL GENERALLY BE BELOW NORMAL THROUGHOUT THE TWO STATE AREA. MOST FORECASTS ARE APPROACHING NORMAL, BUT FEW ARE NORMAL OR ABOVE. WATER SHOULD NOT BE CRITICAL EXCEPT IN A FEW SELECT PLACES. THE LOWER RIO GRANDE WILL HAVE SHORTAGES AS WILL THE LOWER ARKANSAS. IF SUMMER PRECIPITATION IS NORMAL OR ABOVE MOST OTHER AREAS SHOULD HAVE ADEQUATE WATER. FORECASTS ARE SLIGHTLY HIGHER THAN LAST MONTH.

# WATER SUPPLY OUTLOOK

THE MAP ON THIS PAGE INDICATES THE MOST PROBABLE WATER SUPPLY AS OF THE DATE OF THIS REPORT. ESTIMATES ASSUME AVERAGE CONDITIONS OF SNOW FALL, PRECIPITATION AND OTHER FACTORS FROM THIS DATE TO THE END OF THE FORECAST PERIOD. AS THE SEASON PROGRESSES ACCURACY OF ESTIMATES IMPROVE. IN ADDITION TO EXPECTED STREAMFLOW, RESERVOIR STORAGE, SOIL MOISTURE IN IRRIGATED AREAS, AND OTHER FACTORS ARE CONSIDERED IN ESTIMATING WATER SUPPLY. ESTIMATES APPLY TO IRRIGATED AREAS ALONG THE MAIN STREAMS AND MAY NOT INDICATE CONDITIONS ON SMALL TRIBUTARIES.



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#### WATER SUPPLY OUTLOOK BY MAJOR WATERSHED AREAS

#### WATERSHED 1 - SOUTH PLATTE RIVER WATERSHED

Describes water supply conditions in Fort Collins, Big Thompson, Longmont, Boulder Valley, Jefferson, Teller-Park, West Plum, Cherry Creek, Kiowa, West Arapahoe, West Adams, East Adams, Platte Valley, Southeast Weld, and West Greeley Soil Conservation Districts.

#### WATERSHED 2 - ARKANSAS RIVER WATERSHED

Describes water supply conditions in Lake County, Upper Arkansas, Fremont, Custer County Divide, Fountain Valley, Black Squirrel, Horse-Rush Creek, Central Colorado, Turkey Creek, Pueblo, Bessemer, Olney Boone, Cheyenne, Upper Huerfano, Stonewall, Spanish Peaks, Purgatoire, Branson Trinchera, Western Baca County, Southeastern Baca County, Two Buttes, Bent, Timpas, Northeast Prowers, Prowers, West Otero and East Otero Soil Conservation Districts.

#### WATERSHED 3 - RIO GRANDE RIVER WATERSHED (COLORADO)

Describes water supply conditions in Rio Grande, Center, Mosca, Hooper, Mt. Blanca, and Sanchez Soil Conservation Districts.

#### WATERSHED 4 - RIO GRANDE RIVER WATERSHED (NEW MEXICO)

Describes water supply conditions in Lower Cebolla, Abiquiu-Vallecitos, Eastern Taos, Lindrith, Coyote-Canones, Espanola Valley, Pojoaque, Jemez, Santa Fe-Sandoval, Tijeras, Cuba, and Edgewood Soil Conservation Districts.

#### WATERSHED 5 - DOLORES, SAN JUAN, AND ANIMAS RIVERS WATERSHED

Describes water supply conditions in San Miguel Basin, Dove Creek, Dolores, Mancos, LaPlata, Pine River, and San Juan Soil Conservation Districts.

#### WATERSHED 6 - GUNNISON RIVER WATERSHED

Describes water supply conditions in Delta, Gunnison, Cimarron, Shavano, and Uncompangre Soil Conservation Districts.

#### WATERSHED 7 - COLORADO RIVER WATERSHED

Describes water supply conditions in DeBeque, Lower Grand Valley, Bookcliff, Rifle Silt, Eagle County, Middle Park, Glade Park, Upper Grand Valley, Plateau Valley, South Side, and Mt. Sopris Soil Conservation Districts.

#### WATERSHED 8 - YAMPA, WHITE AND NORTH PLATTE RIVERS WATERSHED

Describes water supply conditions in Yampa, Moffat, West Routt, East Routt, North Park, Upper White River, Lower White River, and Douglas Creek Soil Conservation Districts.

# SOUTH PLATTE RIVER WATERSHED IN COLORADO

as of MAY 1, 1961

### U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

#### SNOW COVER

FOR THE SECOND STRAIGHT MONTH THIS AREA HAS RECEIVED BETTER THAN AVERAGE SNOW FALL. SNOW PACK OVER THE BASINS OF THE SOUTH PLATTE IS NEARLY NORMAL. SOME OF THE HIGH ELEVATION SNOW COURSES ARE STILL SLIGHTLY DEFICIENT, BUT MEDIUM TO LOW ELEVATION SNOW PACK IS NORMAL TO SLIGHTLY ABOVE. THE SNOW PACK OVER THE BASIN IS BETTER THAN LAST YEAR AT THIS TIME.

#### SOIL MOISTURE

HIGH ELEVATION SOIL MOISTURE STATIONS SHOW MOUNTAIN SOILS ARE MUCH DRIER THAN NORMAL, INDICATING NO MELT HAS TAKEN PLACE. LAST YEAR AT THIS TIME SOILS WERE SATURATED. ONE REASON THIS SEASON'S SNOW PACK IS BETTER THAN LAST IS BECAUSE NONE OF THE SNOW HAS MELTED SO FAR THIS YEAR. VALLEY SOIL MOISTURE IS REPORTED AS FAIR TO GOOD.

#### RESERVOIR STORAGE

RESERVOIRS CONTAIN MORE CARRYOVER STORAGE THAN LAST YEAR. THIS WILL EASE ANY SHORTAGES THAT MAY EXIST. THE LOWER SOUTH PLATTE RESERVOIRS ARE NEARLY AT CAPACITY.

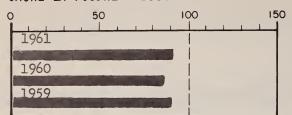
#### STREAMFLOW

STREAMFLOW IS EXPECTED TO BE ABOUT 90% OF THE 15-YEAR AVERAGE. SO FAR STREAMFLOW HAS NOT INCREASED TO ANY LARGE EXTENT. SOILS MUST BE SATURATED BEFORE ANY MATERIAL RISE IN THE RIVERS CAN BE EXPECTED. WITH NEAR NORMAL STREAMFLOW AND ABOVE NORMAL STORAGE, FEW IF ANY SHORTAGES SHOULD OCCUR IN THIS AREA.

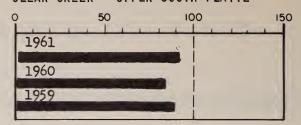
AVERAGE WATER CONTENT IS COMPUTED ON 15-YEAR BASIS (1943-57). ALL YEARS OF RECORD ARE USED WHEN A SNOW COURSE HAS LESS THAN 15 YEARS OF RECORD. STREAMFLOW FORECAST PERIOD IS APRIL THROUGH SEPTEMBER.

THIS REPORT COMPILED IN COOPERATION WITH COLORADO EXPERIMENT STATION AND STATE ENGINEER OF COLORADO.

### CACHE LA POUDRE - BOULDER



#### CLEAR CREEK - UPPER SOUTH PLATTE



## RESERVOIR STORAGE (1,000 AC. FT.)

### SOIL MOISTURE

RESERVOIR	USABLE CAPACITY	THIS YEAR	LAST YEAR	AVERAGE	STATION	CAPACITY (INCHES)	THIS VEAR	LAST YEAR	AVERAGE
Horsetooth**	143.5	119.4	119.1	94.0	Feather	6.0	5.7	6.0	3.6
Windsor	18.6	11.8	13.4	11.4	Laramie Road	7.0	0.8	6.8	4.4
Cache LaPoudre	9.5	8.7	8.5	7.6	Beaver Dam	6.0	0.5	2.9	2.5
Fossil Creek	11.6	10.6	9.2	7.9	Two Mile	8.0	1.2	3.7	3.4
Halligan	6.4	6.4	6.4	2.0	Guard Station	7.0	1.0	3.9	4.3
Chambers Lake	8.8	2.0	4.5	2.6	Alpine Camp	7.0	1.4	3.7	3.0
Cobb Lake	34.3	13.0	18.7	5.5	Hoop Creek	6.0	1.1	6.0	2.0
Black Hollow	8.0	2.2	3.8	3.4	Alma	7.0	1.2	6.7	2.9
Carter Lake**	108.9	94.4	81.3	69.2	Kenosha Pass	7.0	0.9	6.2	5.2
Lake Loveland	14.3	9.6	12.2	7.0	Clear Creek	7.0	0.8	3.4	3.4
Boyd Lake	44.0	33.5	38.3	18.5	* All mast da				
Lone Tree	9.2	7.8	8.5	8.4	ALL public de	ita			
Mariano	5.4	3.9	5.5	3.1	** May 1				
Union	12.7	9.1	12.0	7.2					
Eleven Mile	81.9	98.0	97.8	69.4	I				
Cheeseman	79.0	63.9	79.1	52.7		L PROFIL			
Marston	18.9	17.0	15.8	15.1	LOWER SO. PLAT			. 1,00	
Antero	33.0	15.7	15.7	14.9	RESERVOIR	Usab.		This Y	
Gross**	43.1	12.3	18.7		Prewitt		8.5	30.0	21.5
Milton	24.4	16.0	24.4	12.8	Pt. of Rocks		0.0	71.2	61.7
Standley	18.5	12.9	17.0	12.4	Empire		7.7	36.3	29.5
Marshall	10.3	4.6	8.5	3.5	Jackson		5.4	34.4	34.3
Terry Lake	8.2	5.7	6.3	5.0	Riverside	5	7.5	61.2	50.4

<sup>\* 15</sup> yr. Avg METSHTED STREET OF MONTH

#### PRECIPITATION

STATION	FA AVE.	LL * DEP.	winter DecMar.			
So. Platte	3.44	-1.13	3.96	+.85		
* August through November						

PRELIMINARY U.S. WEATHER BUREAU DATA AVERAGE OF SELECTED STATIONS

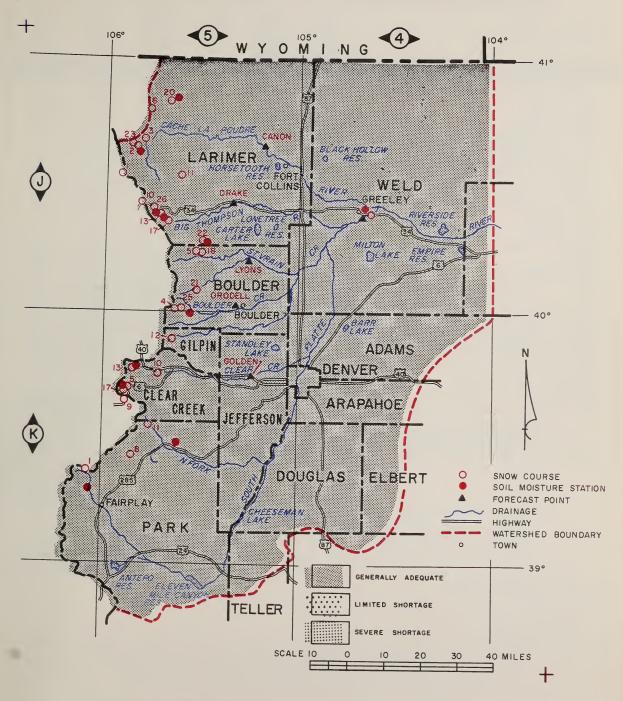
# STREAMFLOW FORECAST (1,000 A.F.)

STREAM AND F STATION	ORECAST	THIS YEAR % AVERAGE	15 YEAR AVERAGE 1943-57
Cache Ia Poudre at Canon(1 Big Thompson at Drake (2) Saint Vrain at Lyons Boulder at Orodell Clear Creek at Golden (3)	) 155 94 70 53 116	89	189 106 84 55 137

- Observed flow minus diversions from Michigan, Colorado and Laramie rivers, plus diversions for irrigation and municipal use above station.
- (2) Observed flow plus by-pass to power plants.
- (3) Observed flow minus diversions through Jones Tunnel.

<sup>\*\*</sup> Less than 15 years

# SOUTH PLATTE RIVER WATERSHED IN COLORADO





SNOW		CURREN	IT INFORMA	TION	PA	ST RECORD	
SNOW COURSE		DATE OF	SNOW DEPTH	WATER	WATER CO	S)	YEARS OF
		SURVEY	(INCHES)	(INCHES)	LAST YEAR	AVERAGE	RECORD
SOUTH PLATTE RIVER and TRIBUTARIES Cameron Pass Chambers Lake Big South Wild Basin Loveland Pass Hoosier Pass Lake Irene Deadman Hill Hour Glass Lake University Camp Jefferson Creek Hidden Valley Grizzly Peak* Red Feather	5J1 5J2 5J3 5J5 5K5 6K1 5J10 5J6 5J11 5J8 5K8 5J13 5K9	4/29 4/29 4/29 4/28 4/26 4/27 4/27 4/27 4/27 4/27 4/27 4/28 4/26 4/30	78 20 4 44 55 42 68 52 24 63 25 43 55 23	27.5 8.0 1.2 12.0 18.3 12.3 18.1 17.0 7.3 20.0 7.7 11.9 19.2 8.6	26.0 0.0 0.0 9.6 12.6 11.4 23.0 15.5 1.8 17.1 3.8 10.8 18.2 0.0	25.6 4.9 0.9 15.2 14.7 11.9 24.3 17.7 7.8 25.1 8.0 13.4 20.1 4.9	25 25 25 25 25 25 25 23 22 21 22 21 20 19
Deer Ridge Copeland Lake Empire Geneva Park Ward Lost Lake Long's Peak Boulder Falls Berthoud Falls Two Mile Loveland Lift No. 1 Baltimore Pine Creek  * On adjacent drainage NS No survey	5J17 5J18 5K10 5K11 5J21 5J23 5J25 5K13 5J26 5K24 5K23 5J31	4/28 5/1 4/28 4/29 4/30 4/27 5/1 4/28 4/26 5/1	8 9 24 1 28 36 46 40 55 89 15 0	4.2 3.0 6.3 0.5 9.1 10.9 13.4 14.5 13.1 16.6 27.1 5.2 0.0	0.9 0.0 5.9 1.1 1.7 5.5 11.9 8.2 8.8 16.0	2.4 7.2 2.2 6.2 10.5 14.3 13.6	12 12 12 11 10 10 8 10

This Report Prepared by
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UNITED STATES

#### DEPARTMENT OF AGRICULTURE

SOIL CONSERVATION SERVICE

Snow Survey Colorado State University Ft. Collins, Colorado

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# ARKANSAS RIVER WATERSHED IN COLORADO

as of

MAY 1, 1961

### U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

#### SNOW COVER

SNOW PACK DID NOT IMPROVE MATERIALLY LAST MONTH, BUT IS STILL NEARLY NORMAL. THE HEADWATER AREA IS THE ONLY LOCATION WHERE THE SNOW PACK IS BELOW NORMAL. SNOW PACK ON THE PURGATORIE AND CUCHARAS WATERSHEDS IS NEARLY TWICE NORMAL. THE AREA AROUND LAVETA PASS HAS BEEN ABOVE NORMAL FOR THE LAST THREE MONTHS.

#### SOIL MOISTURE

SOME MELTING HAS TAKEN PIACE AT THE HIGHER ELEVATIONS. ALL SOILS IN THESE AREAS ARE DRIER THAN LAST YEAR AT THIS TIME EXCEPT ON LAVETA PASS. THIS SOIL MOISTURE STATION INDICATES SOILS ARE SIMILAR TO LAST YEAR AND SLIGHTLY ABOVE NORMAL. ALL SOIL MOISTURE STATIONS INDICATE SOME MELTING HAS TAKEN PLACE EXCEPT IN THE VICINITY OF LEADVILLE. THE VALLEY SOILS ARE REPORTED AS FAIR TO GOOD FOR THE WHOLE ARKANSAS VALLEY.

#### RESERVOIR STORAGE

HOLDOVER STORAGE IS POOR. NONE OF THE RESERVOIRS ON THE ARKANSAS DRAINAGE CONTAIN AS MUCH WATER AS LAST YEAR AND NONE ARE NEAR NORMAL. NO SUPPLEMENTAL WATER CAN BE EXPECTED FROM THIS SOURCE.

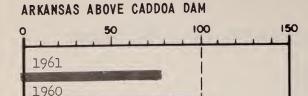
#### STREAMFLOW

STREAMFLOW ON THE MAIN STEM WILL BE BETWEEN 85% AND 90% OF NORMAL. SOUTHERN TRIBUTARIES TO THE ARKANSAS RIVER SHOULD FLOW AT LEAST NORMAL AND PROBABLY ABOVE. THE ARKANSAS VALLEY WILL EXPERIENCE SOME SHORTAGE THIS SUMMER ESPECIALLY LATER IN THE SEASON UNLESS SUMMER PRECIPITATION IS EXCESSIVE.

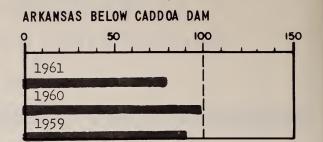
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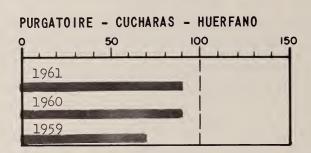
THIS REPORT COMPILED IN COOPERATION WITH COLORADO EXPERIMENT STATION AND STATE ENGINEER OF COLORADO.

#### ISSUED BY: SOIL CONSERVATION SERVICE



1959





## RESERVOIR STORAGE (1.000 AC. FT.)

RESERVOIR	USABLE CAPACITY	THIS YEAR	LAST YEAR	AVERAGE
Twin Lakes Sugar Loaf Clear Creek Meredith Horse Creek Adobe Creek Cucharas John Martin Model Great Plains * 15 yr. Avg. 1	57.9 17.4 11.4 41.9 26.9 61.6 40.0 366.6 15.0 150.0	9.5 6.5 5.5 5.2 0 0 2.1 11.6 4.3 22.7	10.7 3.2 8.2 - 0.0 0.0 1.2 20.9 5.0 55.4	19.3 7.6 4.3 13.3 7.4 21.2 4.4 44.8 2.3 51.1

#### PRECIPITATION

STATION	FA AVE.	LL * DEP.	winter Ave. Dep.		
Arkansas	4.76	.08	3.99	+.38	

\*Augustinthroughe Hove Boreau Data average of selected stations

MEASURED FIRST OF MONTH

#### SOLL MOISTURE

OUTE HOTOTOKE							
STATION	CAPACITY (INCHES)	THIS YEAR	LAST YEAR	AVERAGE			
Leadville Twin Lakes Garfield King LaVeta Pass  * All past ** May 1	7.0 5.0 7.0 8.0 8.0	0.5 2.5 3.7 4.6 7.6	2.9 5.8 4.5 5.4 7.8	3.1 5.9 5.5 6.1 7.2			

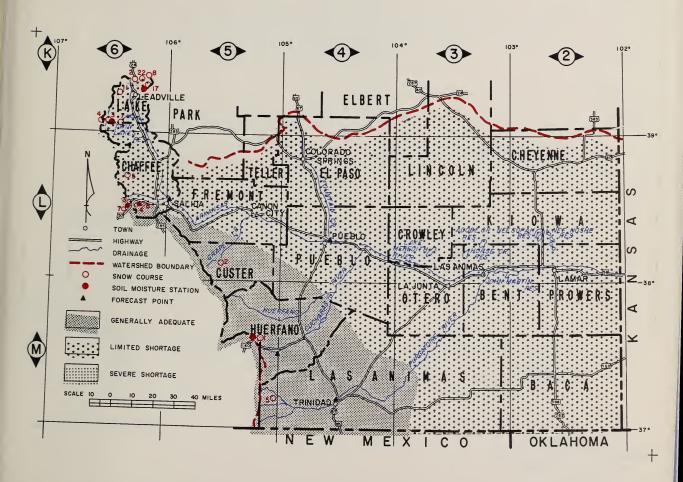
ALL PROFILES 4 FEET DEEP

# STREAMFLOW FORECAST (1000 A.F.)

STREAM	FORECAST	THIS	15 YEAR AVERAGE 1943-57
Arkansas at Salida (1)	300	88	339
Arkansas at Pueblo (1)	306	89	342
Cucharas nr LaVeta	15	107	14
Purgatoire at Trinidad	42	80	52

(1) Observed flow plus change in storage in Clear Creek, Twin Lakes, and Sugar Loaf Reservoirs minus diversions through Busk-Ivanhoe and Twin Lake Tunnels and Ewing, Fremont Pass, Wurtz and Columbine Ditches.

# ARKANSAS RIVER WATERSHED IN COLORADO





SNOW		CURRE	NT INFORMA	TION	PA	ST RECORD	
SNOW COURSE	NO.	DATE OF	SNOW DEPTH	WATER	WATER CONTENT (INCHES)		YEARS OF
		SURVEY	(INCHES)	(INCHES)	LAST YEAR	AVERAGE	RECORI
ARKANSAS RIVER Tennessee Pass Twin Lakes Tunnel LaVeta Pass* Four Mile Fark Fremont Pass Carfield Monarch Pass St. Elmo Timberline East Fork Westcliffe Bourbon Tomichi Cooper Hill  * On adjacent drainage	6K2 6K3 5M1 6K7 6K8 6L8 6L4 6L5 6K11 6K17 5L2 5M5 6L7 6K23	4/28 4/28 4/26 4/28 4/27 4/27 4/27 4/28 NS 4/26 4/28 4/27 4/27	26 30 13 1 51 41 58 50 19 3 18 34 41	8.7 9.7 5.0 0.4 16.0 14.2 20.6 13.9 6.0 1.1 4.8 11.5 10.4	6.2 7.8 0.0 0.0 19.2 0.0 13.1  6.5 0.5 0.0 12.4 16.3	6.8 9.2 2.8 0.7 18.6  17.7 11.2 22.1 8.7 1.3 3.0	25 24 25 23 25  20 10 11 9 8 5
NS No survey							

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# UPPER RIO GRANDE RIVER WATERSHED IN COLORADO

as of MAY 1, 1961

### U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

#### SNOW COVER

MAY 1 SNOW SURVEYS INDICATE THE SAME PATTERN AS FORMER MONTHS. GENERALLY HIGH ELEVATION SNOW COURSES ARE BELOW NORMAL WITH THE MEDIUM TO LOW COURSES SHOWING NORMAL. THE SANGRE DE CRISTO RANGE HAS AN ABOVE AVERAGE SNOW PACK.

#### SOIL MOISTURE

SOIL MOISTURE READINGS WERE MADE AT FOUR STATIONS ON MAY 1. TWO OF THESE FOUR STATIONS ARE APPROACHING CAPACITY. IN OTHER WORDS. THE SOIL MANTLE CONTAINS ABOUT ALL THE MOISTURE POSSIBLE. THIS IS A NECESSITY BEFORE RUNOFF WILL OCCUR. THE OTHER TWO ARE NEAR NORMAL FOR THIS DATE.

#### RESERVOIR STORAGE

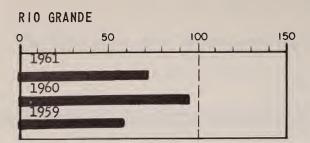
CARRYOVER STORAGE IN THE RESERVOIRS IN THE RIO GRANDE BASIN IS LESS THAN NORMAL AND LESS THAN LAST YEAR. SIX MAJOR RESERVOIRS CONTAIN ONLY 35,100 A.F. AS OF MAY 1 COMPARED TO A 15-YEAR NORMAL FOR THIS DATE OF 48,800 A.F.

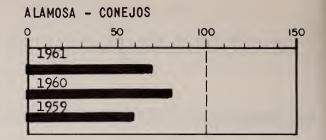
#### STREAMFLOW

STREAMFLOW WILL BE SOMEWHAT DEFICIENT ON ALL STREAMS IN THE RIO GRANDE BASIN EXCEPT THOSE ORIGINATING IN THE SANGRE DE CRISTO RANGE. THE CULEBRA IS EXPECTED TO FLOW NEAR NORMAL. FORECAST FOR THE MAIN STEM OF THE RIO GRANDE AT DEL NORTE IS 370,000 A.F. OR ABOUT 75% OF AVERAGE.

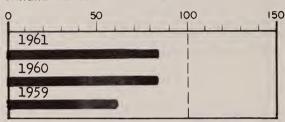
AVERAGE WATER CONTENT IS COMPUTED ON 15-YEAR BASIS (1943-57). ALL YEARS OF RECORD ARE USED WHEN A SNOW COURSE HAS LESS THAN 15 YEARS OF RECORD. STREAMFLOW FORECAST PERIOD IS APRIL THROUGH SEPTEMBER.

THIS REPORT COMPILED IN COOPERATION WITH COLORADO EXPERIMENT STATION AND STATE ENGINEER OF COLORADO.





#### SANGRE DE CRISTO STREAMS



# RESERVOIR STORAGE (1,000 AC. FT.)

RESERVOIR	USABLE CAPACITY	THIS YEAR	LAST YEAR	AVERAGE
Rio Grande Santa Maria Sanchez Terrace Continental Platoro * 15 year 194 ** Shorter Per		9.2 4.3 8.4 4.6 4.6 4.0	13.6 6.3 16.1 11.5 7.9 6.7	11.6 8.4 11.1 3.5 8.9 5.3*

MEASURED FIRST OF MONTH

### PRECIPITATION

			-7.c			
	STATION	FA AVE.	DEP.	ADec. Mar.		
Ì	Rio Grande (Colo.)	1.07	24	2.60	+•39	
	*August through Nov	ember				

PRELIMINARY U.S. WEATHER BUREAU DATA AVERAGE OF SELECTED STATIONS

# SOIL MOISTURE

# STREAMFLOW FORECAST (1,000 A.F.)

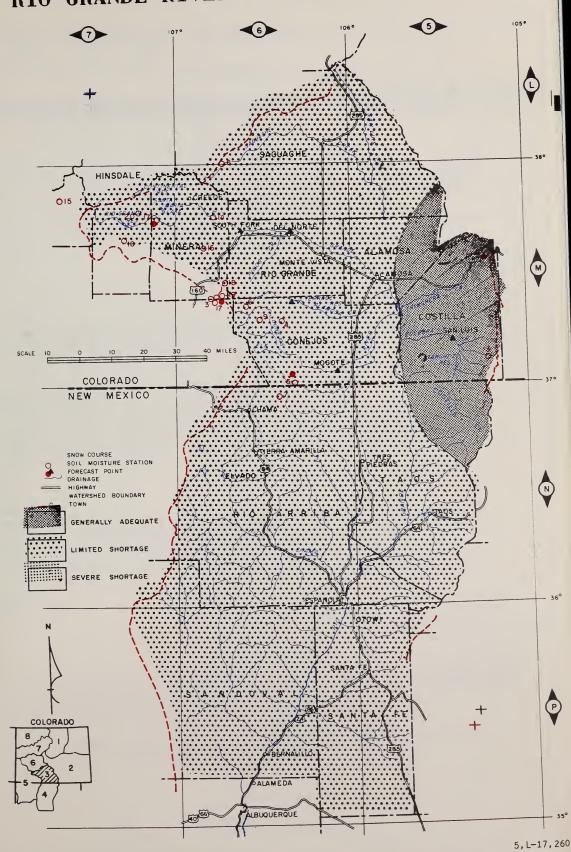
STATION	CAPACITY (INCHES)	THIS	LAST YEAR	AVE <b>RA</b> GE
Bristol View Alberta Park Mogote LaVeta Pass  * All past d ** May 1 date		6.7 4.4 6.5 7.6	6.6 7.0 6.3 7.8	3.6 5.4 5.3 7.2

ALL PROFILES 4 FEET DEEP

STREAM AND STATION	FORECAST	THIS YEAR % AVERAGE	15 YEAR AVERAGE 1943-57
South Fork at South Fork Rio Grande nr Del Norte Alamosa above Terrace Conejos nr Mogote Culebra at San Luis	87	72	121
	370	75	491
	57	80	71
	165	84	197
	25	104	24

- (1) Observed flow plus change in storage in Santa Maria, Rio Grande, and Continental Reservoir
- (2) Observed flow plus changes in storage in Sanchez Reservoir.

# UPPER RIO GRANDE RIVER WATERSHED IN COLORADO



SNOW		CURRENT INFORMATION			PAST RECORD		
SNOW COURSE	NO.	DATE OF SURVEY	SNOW DEPTH (INCHES)	WATER CONTENT (INCHES)	WATER COUNTY (INCHE		YEARS OF RECORD
			,	,	LASI TEAR	AVERAGE	
RIO GRANDE IN COLORADO							0.5
Wolf Creek Pass	6M1	4/27	51	21.2	20.1	25.4	25
Upper Rio Grande	7M16	4/28	5	2.2	0.0	2.3	25
Santa Maria	7M17	4/29	1	0.3	0.0	0.7	22
Pool Table	5M14	4/27	14	4.1	0.0	1.8	12
Lake Humphreys	6M15	4/27	2	0.7	0.0	0.2	12
Cochetopa Pass	6L6	4/26	18	6.6	0.0	2.5	12
Red Mountain Pass *	7M15	4/28	85	32.5	33.5	31.7	10
Porcupine	7M20	4/27	26	5.8	10.4	6.4	10
Wolf Creek Summit *	7M17	4/27	79	27.8	34.5	30.5	10
Hiway	6M19	4/27	69	25.1	30.0	30.0	5
Pass Creek	6M18	4/27	12	4.4	0.0	3.5	5
ALAMOSA RIVER							
Silver Lakes	6M4	4/27	0	0.0	0.0	0.6	24
Summitville	6M6	4/28	60	20.3	17.9	21.9	21
CONEJOS RIVER							
River Springs	6M5	4/26	3	1.1	0.0	1.0	24
Cumbres Pass	6M7	4/27	40	17.3	5.3	13.3	25
Platoro	6M9	5/1	21	5.9	5.0	10.3	12
SANGRE DE CRISTO RANGE (Colo.)							
IaVeta Pass	5M1	4/26	13	5.0	0.0	2.8	25
Culebra	5M3	4/27	22	8.1	0.5	6.3	21
Outobla							
* On adjacent drainage							
NS No survey							
110 110 541 10							
							- 13
							13

This Report Prepared by
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# RIO GRANDE RIVER WATERSHED IN NEW MEXICO

**as of** MAY 1, 1961

# U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

#### SNOW COVER

ONLY A FEW SNOW COURSES ARE READ IN NEW MEXICO ON MAY 1. USUALLY MOST OF THE SNOW PACK HAS MELTED BY THIS TIME. THE TWO COURSES THAT WERE MEASURED INDICATE MOST OF THE SNOW IS GONE. SEVENTEEN SNOW COURSES ON THE RIO GRANDE IN COLORADO INDICATED THE SAME TREND AS LAST MONTH. HIGH ELEVATION SNOW COURSES ARE DEFICIENT WHILE MEDIUM TO LOW COURSES INDICATE NORMAL TO SLIGHTLY ABOVE SNOW PACK.

#### SOIL MOISTURE

SOIL MOISTURE CONDITIONS IN THE PLAINS AREA OF THE RIO GRANDE BASIN ARE REPORTED AS FAIR TO GOOD. HIGH WINDS ARE REPORTED IN SEVERAL AREAS WHICH WILL RAPIDLY DRY THE SURFACE SOILS.

#### RESERVOIR STORAGE

WATER STORED IN RESERVOIRS ALONG THE RIO GRANDE IS STILL CONSIDERABLY BELOW NORMAL. STORAGE ON THE PECOS AND CANADIAN DRAINAGES IS EXCELLENT. GOOD WATER SUPPLIES IN THESE AREAS ARE VIRTUALLY ASSURED.

#### STREAMFLOW

MOST FORECASTS WERE RAISED SLIGHTLY THIS MONTH. THE ONLY AREAS THAT ARE ASSURED OF A GOOD WATER SUPPLY ARE THE PECOS AND CANADIAN. THE MAIN STEM OF THE RIO GRANDE WILL HAVE SHORTAGES OVER ITS ENTIRE LENGTH. THE MOST SEVERE SHORTAGES WILL BE BELOW ESPANOLA. FORECAST FOR THE RIO GRANDE AT SAN MARCIAL IS ONLY 63% OF NORMAL.

AVERAGE WATER CONTENT IS COMPUTED ON 15-YEAR BASIS (1943-57). ALL YEARS OF RECORD ARE USED WHEN A SNOW COURSE HAS LESS THAN 15 YEARS OF RECORD. STREAMFLOW FORECAST PERIOD IS MARCH THROUGH JULY.

THIS REPORT COMPILED IN COOPERATION WITH COLORADO EXPERIMENT STATION, STATE ENGINEER OF COLORADO AND STATE ENGINEER OF NEW MEXICO.

# RESERVOIR STORAGE (1,000 AC. FT.)

	RESERVOIR	USABLE CAPACITY	THIS YEAR	LAST YEAR	AVERAGE
	Elephant Butte	2206.8	330.3	593.4	551.7
į	Caballo	344.0	78.8	116.2	130.3
)	El Vado	194.5	60.0	68.0	85.8
	Alamogordo	122.1	122.1	105.0	36.0
	McMillan-Avalon	37.0	21.8	6.6	8.3
	Red Bluff (Tex)	307.0	2.8	64.0	68.5
	Conchas	600.0	279.4	323.1	265.2
		9	•		

\* 15 year avg. 1943-57 FIRST OF MONTH

### PRECIPITATION

STATION	FALL AVE. DEP.	winter  *DecMar.
Upper Rio Grande Middle Rio Grande Lower Rio Grande	4.89 -1.18	2.60 + .39 3.75 + .36 2.53 -1.27

\* August through WNOVEMBER LECTED STATIONS

#### SOIL MOISTURE

STATION	CAPACITY (INCHES)	THIS YEAR	LAST YEAR	AVERAGE
Mogote (Colo)	7.0	6.5**	6.3	5.3
Bristol View (Colo)	7.0	6.7**	6.6	3.6
Alberta Park (Colo)	9.0	4.4**	7.0	5.4
Chamita (New Mex)	8.0	6.2**	6.2	2.4
Bateman	6.7	1.7#	1.0	4.5
Big Tesuque	3.7	0.9#	1.9	3.4
Taos Canyon	3.3	3.0#	3.1	2.2
Rio En Medio	3.5	0.2#	0.3	0.3
Fenton Hill	6.5	6.5#	6.5	
Red Summit	7.8	0.7#	0.2	0.8
Aqua Piedra	7.2	5.0#	1.9	2.7

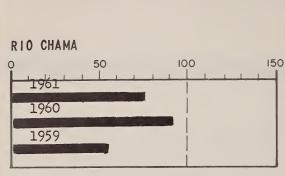
\*All past data ALL PROFILES 4 FEET DEEP

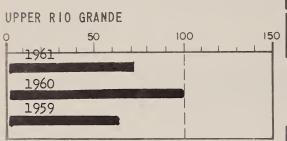
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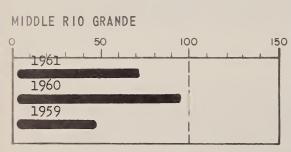
\*\* May 1 readings # April 1 readings STREAMFLOW FORECAST (1,000 A.F.)

STREAM AND STATION	FORECAST	THIS YEAR % AVERAGE	15 YEAR AVERAGE 1943-57
Rio Chama nr Ia Puenta	155	74	210
Costilla at Costilla	25	93	27
Rio Grande at Otowi (10)	475	75	633
Rio Gr. at San Marcial (10)	275	63	434
Pecos at Pecos	50	104	48

- (10) Observed flow plus changes in storage in Santa Maria, Rio Grande, Continental, Terrace, Sanchez, Platoro and El Vado Reservoirs.
  - \* Rio Grande at Otowi and Rio Grande at San Marcial ave. Mar-July inclusive.



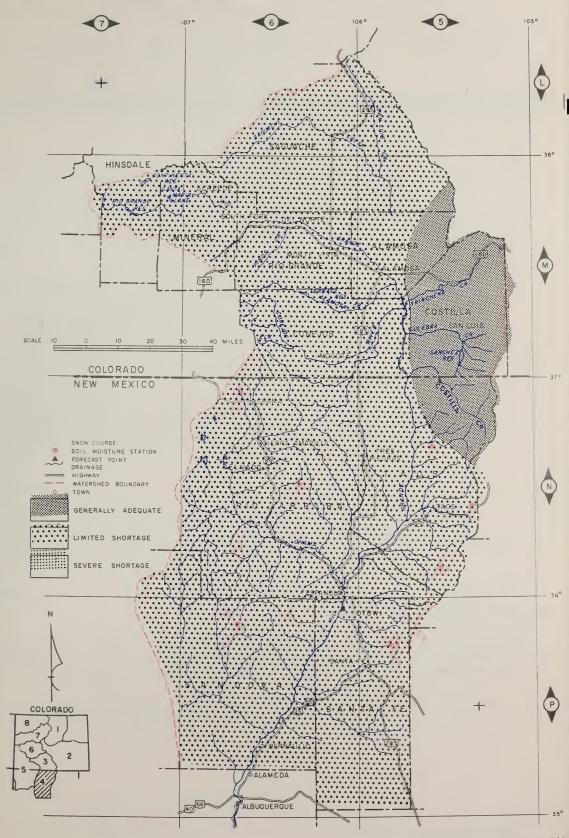






1961	
1960	
1959	

# RIO GRANDE RIVER WATERSHED IN NEW MEXICO



SNOW		CURRE	NT INFORMA	TION	PA	ST RECORD	
SNOW COURSE	NO.	DATE OF SURVEY	SNOW DEPTH (INCHES)	WATER CONTENT (INCHES)	WATER CONTROL (INCHE		YEARS OF RECORD
Upper Rio Grande Santa Maria Pool Table Lake Humphreys Cochetopa Pass Porcupine Wolf Creek Summit Hiway Pass Creek Silver Lakes Summitville River Springs Cumbres Pass Platoro LaVeta Pass	6M1 7M16 7M17 6M14 6M15 6L6 7M20 6M17 6M19 6M18 6M4 6M6 6M5 6M7 6M9 5M1 5M3	4/27 4/28 4/29 4/27 4/27 4/27 4/27 4/27 4/27 4/28 4/26 4/27 5/1 4/26 4/27	51 5 1 14 2 18 26 79 69 12 0 60 3 40 21 13 22	21.2 2.2 0.3 4.1 0.7 6.6 5.8 27.8 25.1 4.4 0.0 20.3 1.1 17.3 5.9 5.0 8.1	20.1 0.0 0.0 0.0 0.0 10.4 34.5 30.0 0.0 17.9 0.0 5.3 5.0 0.0	25.4 2.3 0.7 1.8 0.2 2.5 6.4 30.5 30.0 3.5 0.6 21.9 1.0 13.3 10.3 2.8 6.3	25 25 22 12 12 10 10 5 5 24 21 24 25 12 25 21
RIO GRANDE (New Mexico) Chamita Rio En Medio	6N3 5P5	4/27 4/28	2 4	0.5	1.9	-	3

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This Report Prepared by
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Soil Conservation Service
Colorado State University
Ft Collins, Colorado

# SAN MIGUEL - DOLORES - ANIMAS - SAN JUAN WATERSHEDS IN COLORADO & NEW MEXICO

**as** of MAY 1, 1961

### U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

#### SNOW COVER

MAY 1 SNOW SURVEYS SHOW SOME IMPROVEMENT IN SNOW COVER DURING APRIL. THE ANIMAS AND DOLORES WATERSHEDS NOW HAVE A SLIGHTLY ABOVE AVERAGE SNOW COVER. THE SAN JUAN SNOW COVER REMAINS BELOW NORMAL. HIGH ELEVATION SNOW PACK IS DEFICIENT. THIS IS THE GENERAL PATTERN THROUGHOUT THE STATE.

#### SOIL MOISTURE

MOUNTAIN SOILS ARE WET INDICATING CONSIDERABLE SNOW MELT DURING APRIL. SOIL MOISTURE AT THE HIGH ELEVATIONS IS NOW ABOVE NORMAL AND BETTER THAN A YEAR AGO AT THIS TIME. MOST VALLEY SOILS ARE REPORTED AS FAIR TO GOOD, WITH MOST PLACES REPORTING GOOD SOIL MOISTURE.

#### RESERVOIR STORAGE

COMBINED STORAGE IN GROUNDHOG AND VALLECITO IS 66,000 A.F. COMPARED TO A NORMAL OF 73,500 A.F. THE HOLDOVER STORAGE LAST YEAR AT THIS TIME WAS ONLY 58,100 A.F.

#### STREAMFLOW

IF SUMMER PRECIPITATION IS NORMAL OR BETTER, WATER SUPPLIES SHOULD BE GENERALLY ADEQUATE. FORECASTS RANGE FROM 85% OF NORMAL ON SAN JUAN TO 104% ON THE DOLORES RIVER. MOST STREAMS IN THIS AREA ARE EXPECTED TO RUN NEAR NORMAL. CURRENT STREAMFLOW IS SLIGHTLY BELOW NORMAL.

AVERAGE WATER CONTENT IS COMPUTED ON 15-YEAR BASIS (1943-57). ALL YEARS OF RECORD ARE USED WHEN A SNOW COURSE HAS LESS THAN 15 YEARS OF RECORD. STREAMFLOW FORECAST PERIOD IS APRIL THROUGH SEPTEMBER.

THIS REPORT COMPILED IN COOPERATION WITH COLORADO EXPERIMENT STATION, STATE ENGINEER OF COLORADO AND STATE ENGINEER OF NEW MEXICO.

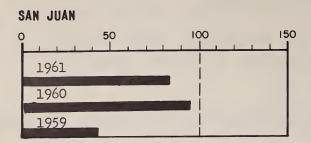
#### ISSUED BY: SOIL CONSERVATION SERVICE

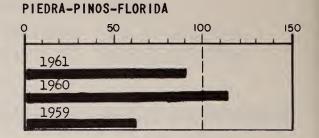
K. W. Chalmers, State Conservationist, Colorado J. P. Sexton, Area Conservationist, Monte Vista, Colorado R.A. Young, State Conservationist, New Mexico J.B. Christy, Area Conservationist Albuquerque, N.M.

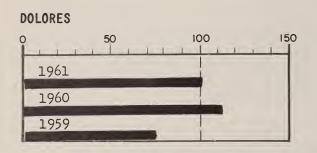
Monte Vista, Colorado

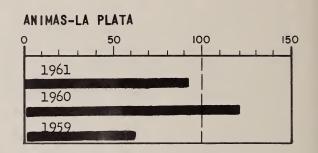
E. A., Nicholson, Area Conservationist 

Grand Junction, Colorado









# RESERVOIR STORAGE (1,000 AC. FT.)

RESERVOIR	USABLE	THIS	LAST	average
	CAPACITY	YEAR	YEAR	*
Groundhog	21.7		7.5	9.2
Vallecito	126.3		50.6	64.3
* 15 Year Av	g. 1943			

MEASURED FIRST OF MONTH

# SOIL MOISTURE

STATION	CAPACITY (INCHES)	THIS YEAR ₩₩	LAST YEAR	AVERAGE ☆
Lizard Head Dolores Rico Mineral Creek Molas Lake Cascade  * All Past da ** May 1 data	7.0 7.0	5.6 5.0 NS	3.9 4.2 3.5 4.8 4.4 4.9	4.4 3.5 4.2 5. 5. 7

### PRECIPITATION

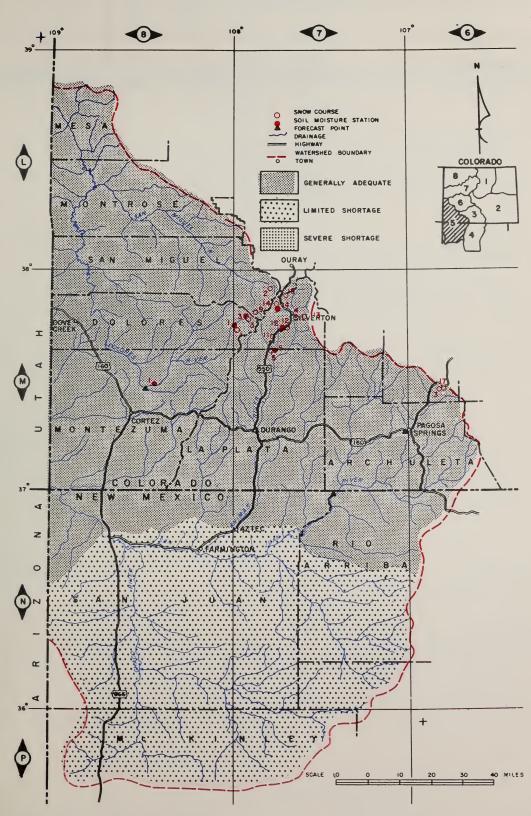
STATION	AVE.	DEP.	winter AveMar			
Do pres Sal Juan		-1.00 -4.48		+ .88		
* August through No	vember					

PRELIMINARY U.S. WEATHER BUREAU DATA AVERAGE OF SELECTED STATIONS

# STREAMFLOW FORECAST (1,000 A.F.)

STREAMFLOW FO	KLUAJ	, ,-,	
STREAM AND STATION	FORECAST	THIS YEAR % AVERAGE	15 YEAR AVERAGE 1943-57
San Juan at Rosa, N. M. Los Pinos nr Bayfield* Florida nr Durango Animas at Durango LaPlata at Hesperus Dolores at Dolores Piedra Cr. nr Piedra	500 210 58 450 26 290 167	85 95 94 95 93 104 90	587 220 62 475 28 279 186

# SAN MIGUEL-DOLORES-ANIMAS-SAN JUAN RIVERS WATERSHEDS IN COLORADO & NEW MEXICO



SNOW			NT INFORMA	TION	PAST RECORD		
SNOW COURSE	NO.	DATE OF SURVEY	SNOW DEPTH (INCHES)	WATER CONTENT (INCHES)	WATER CO (INCHE	S)	YEARS OF RECORD
SAN JUAN RIVER Wolf Creek Pass* Upper San Juan Wolf Creek Summit Chamita * ANIMAS RIVER Silverton Sub-Station Ironton Park * Cascade Spud Mountain Molas Lake Howardville Mineral Creek Red Mountain Pass DOLORES RIVER Rico Telluride Lizard Head Trout Lake  * Adjacent drainage NS No survey	6M1 6M3 6M17 6N3 7M4 7M6 7M5 7M11 7M12 7M13 7M14 6M19 7M1 7M2 7M3 7M9	4/27 4/27 4/27 4/27 4/27 4/28 4/28 4/28 4/28 4/28 4/28 4/28 4/28	51 65 79 2 9 36 13 56 21 27 36 85 0 7 35 32	21.2 26.9 27.8 0.5 0.9 14.3 4.7 21.5 7.6 8.8 13.3 32.5 0.0 3.0 15.6 11.6	20.1 19.8 34.5 NS 0.0 8.7 3.0 20.8 5.0 9.9 12.1 33.5 0.0 0.0 14.3 12.2	25.4 30.3 30.5 - 0.5 7.0 2.9 24.4 7.9 7.2 12.2 31.7 1.3 1.2 12.9 9.4	25 25 10  23 23 25 10 10 10 10 10 10 12 24 25 24 12

This Report Prepared by
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# **GUNNISON RIVER WATERSHED IN COLORADO**

as of

MAY 1, 1961

# U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

#### SNOW COVER

SNOW PACK ON THE GUNNISON DRAINAGE IMPROVED DURING THE MONTH OF APRIL. ONLY THE HIGH ELEVATION SNOW COURSES ARE BELOW NORMAL. SNOW FIELDS ON THE UNCOMPANGE DRAINAGE ARE ABOVE AVERAGE. THE GRAND MESA AREA IS GENERALLY NORMAL.

#### SOIL MOISTURE

HIGH ELEVATION SOIL MOISTURE STATIONS INDICATE CONSIDERABLE SNOW MELT DURING APRIL. ALL STATIONS SHOW NEARLY NORMAL MOISTURE IN THE SOIL MANTLE. SOIL MOISTURE IN THE VICINITY OF MONTROSE IS REPORTED AS GOOD. THE CUNNISON AREA REPORTS FAIR SOIL MOISTURE CONDITIONS.

#### RESERVOIR STORAGE

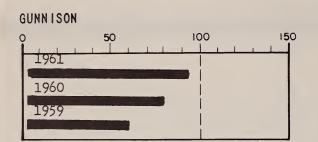
TAYLOR PARK RESERVOIR CONTAINS 38,500 A.F. COMPARED TO A 15-YEAR NORMAL OF 67,000 A.F.

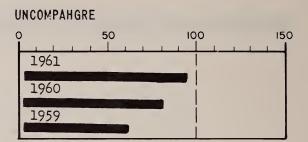
#### STREAMFLOW

STREAMFLOW IS EXPECTED TO BE NEAR AVERAGE THIS SUMMER. FORE-CASTS RANGE FROM 87% OF NORMAL ON THE GUNNISON TO NEAR NORMAL ON THE SURFACE CREEK. UNLESS SUMMER PRECIPITATION IS MUCH BELOW NORMAL THE WATER SUPPLY IN THIS AREA SHOULD BE ADEQUATE FOR AGRICULTURAL AND MUNICIPAL USE.

AVERAGE WATER CONTENT IS COMPUTED ON 15-YEAR BASIS (1943-57). ALL YEARS OF RECORD ARE USED WHEN A SNOW COURSE HAS LESS THAN 15 YEARS OF RECORD. STREAMFLOW FORECAST PERIOD IS APRIL THROUGH SEPTEMBER.

THIS REPORT COMPILED IN COOPERATION WITH COLORADO EXPERIMENT STATION AND STATE ENGINEER OF COLORADO.





# RESERVOIR STORAGE (1,000 AC. FT.)

KLOLKVOIK O	TORAGE	(1,0	700 AC	, , , , , ,
RESERVOIR	USABLE CAPACITY	THIS YEAR	LAST YEAR	AVERAGE
Taylor	106.2	38.5	61.3	67.0
* 15 yr. ave	rage l	943-57		

1			l .
MEASURED	FIRST	OF	MONTH

### SOIL MOISTURE

STATION	CAPACITY (INCHES)	THIS TEAR	LAST YEAR	AVERAGE **
Mineral Creek Placita Maroon King * All past da	8.0 8.0 8.0	NS 6.4 7.4 4.6	4.8 7.8 7.8 5.4	5.7 6.9 7.4 6.1
** May 1 Data				-

## PRECIPITATION

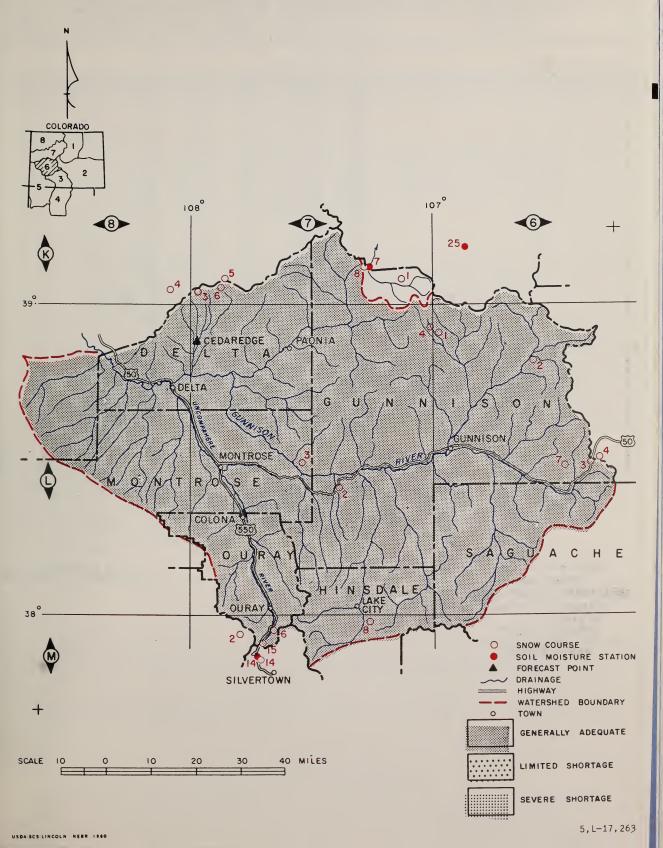
STATION	FA AVE.	DEP.	win Av <u>r</u> De c	TER -Mar.
Gunnison	3.52	-1.10	4.25	98
* August through N	ovembe	r		

PRELIMINARY U.S. WEATHER BUREAU DATA AVERAGE OF SELECTED STATIONS

# STREAMFLOW FORECAST (1,000 A.F.)

l	STREAM AND STATION	FORECAST	YEAR % AVERAGE	AVERAGE 1943-57	
The state of the s	Gunnison nr. Grand Jct. Uncompahgre at Colona Surface Cr. at Cedaredge	1200 140 18	97	1386 145 18	

# GUNNISON RIVER WATERSHED IN COLORADO



SNOW			CURRENT INFORMATION			PAST RECORD		
SNOW COURSE	NO.	DATE OF SURVEY	SNOW DEPTH (INCHES)	WATER CONTENT (INCHES)	WATER C (INCHE	ES)	YEARS OF RECORD	
	+	I I			LAST TEAK	AVERAGE		
GUNNISON RIVER								
Crested Butte	\$Ll	4/27	21	10.0	0.0	7.9	25	
Park Cone	6I2	4/27	29	7.9	7.9	7.4	24	
Alexander Lake	7K3	4/29		P/	22.5	22.7	24	
Mesa Lakes *	7K4	4/26	50		16.4	14.4	24	
Porphyry Creek	6L3	4/27		F1 7 4	15.6	16.7	21	
Monarch Pass *	614	4/27				17.7	20	
North Lost Trail *	7Kl	4/26		11.7	0.4	8.8	25	
Trickle Divide *	7K5	4/28				29.4	21	
Park Reservoir	7K6	4/28			23.7	25.5	20	
Cochetopa Pass	6L6	4/26	18	6.6	0.0	2.5	12	
McClure Pass	7K8	4/26	31	9.3		10.1	11	
Mineral Creek *	7M14	4/28				12.2	10	
Lake City	7M8	4/30	11	3.8	3.4	3.5	13	
Tomichi	6L7	4/27			12.4		1	
Blue Mesa	712	4/28	8	3.0	0.4		1	
Keystone	7L3	4/27		14.8			-	
Long Draw	714	4/28	0				-	
Black Mesa Climatic Station	7L5	4/27	42	13.5			_	
UNCOMPAHGRE RIVER	735/	1 /07	36	11 2	8.7	7.0	23	
Ironton Park	7M6	4/27	-	14.3	0.0	7.0	25	
Telluride	7M2	4/27	7	3.0		12.9	24	
Lizard Head	7M3	4/29			14.3 12.2	9.4	12	
Trout Lake	7M9	4/28			33.5	31.7	10	
Red Mountain Pass *	7M15	4/20	0)	02.0	ر• رر	7101	10	
NS - No Survey								
* - On adjacent drainage					11			

This Report Prepared by
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**DEPARTMENT OF AGRICULTURE** 

SOIL CONSERVATION SERVICE

Snow Survey Colorado State University Ft. Collins, Colorado

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# COLORADO RIVER WATERSHED IN COLORADO

**as** of MAY 1, 1961

# U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

#### SNOW COVER

SNOW PACK INCREASED SLIGHTLY ON THE COLORADO BASIN DURING APRIL, BUT AS A WHOLE IS STILL BELOW NORMAL. SOME OF THE SNOW COURSES ON THE BASIN ARE NOW NORMAL OR ABOVE. SNOW PACK ON THE ROARING FORK AND PLATEAU CREEK IS NEAR NORMAL. HEADWATER AREAS OF THE COLORADO RIVER ARE THE MOST DEFICIENT.

#### SOIL MOISTURE

MOUNTAIN SOILS HAVE STARTED TO ABSORB SOME WATER FROM THE SNOW PACK. MOST SOIL MOISTURE STATIONS SHOW MUCH HIGHER MOISTURE CONTENT THAN LAST MONTH. SOIL MOISTURE IN THE VALLEYS IS REPORTED AS FAIR TO GOOD.

#### RESERVOIR STORAGE

THE TWO MAIN RESERVOIRS IN THE HEADWATERS AREA ARE GREEN MOUNTAIN AND GRANBY. THESE HAVE A COMBINED TOTAL STORAGE OF 269,000 A.F. COMPARED TO A NORMAL OF 238,000 A.F. WATER STORED IN THESE RESERVOIRS DOES NOT BENEFIT WATER USERS ON THE COLORADO BASIN IN COLORADO.

#### STREAMFLOW

STREAMFLOW WILL BE BELOW NORMAL, HOWEVER, WATER SUPPLIES SHOULD BE ADEQUATE FOR THE LIMITED USAGE ON THIS BASIN. FORECASTS RANGE FROM 74% OF NORMAL ON THE BLUE RIVER TO 87% ON THE MAIN STEM AT GLENWOOD SPRINGS.

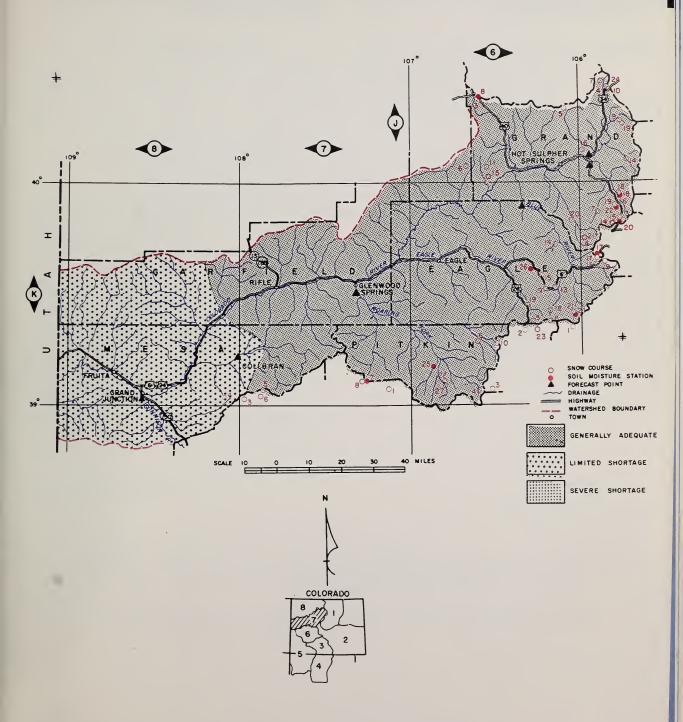
AVERAGE WATER CONTENT IS COMPUTED ON 15-YEAR BASIS (1943-57). ALL YEARS OF RECORD ARE USED WHEN A SNOW COURSE HAS LESS THAN 15 YEARS OF RECORD. STREAMFLOW FORECAST PERIOD IS APRIL THROUGH SEPTEMBER.

THIS REPORT COMPILED IN COOPERATION WITH COLORADO EXPERIMENT STATION AND STATE ENGINEER OF COLORADO.

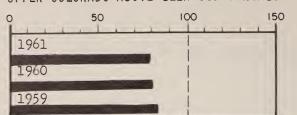
SNOW		CURRENT INFORMATION			PAST RECORD		
SNOW COURSE NO. OF		SNOW	WATER	WATER C	ONTENT	YEARS	
SNOW COURSE	NO.	SURVEY	(INCHES)	(INCHES)	LAST YEAR		OF RECORD
(1777)							
COLORADO RIVER (UPPER)		1 /00				, ,	
Phantom Valley	5J4	4/27	28	6.3	2.8	6.6	25
Hoosier Pass	6Kl	4/27	42	12.3	11.4	11.9	25
Berthoud Pass	5K3	4/27	49	15.5	13.1	14.3	25
Tennessee Pass	6K2	4/28	26	8.7	6.2	6.8	25
M. Fork Camp Ground	5K4	4/26	32	9.7	2.2	6.0	25
Fiddlers Gulch	6K5	4/27	46	14.6	15.3	15.9	23
Lulu	5J7	4/30	52	16.8	18.2	19.0	21
Willow Creek Pass	6J5	4/26	42	13.2	7.6	11.5	23
North Inlet Grand Lake	5J9	4/26	27	5.4	3.3	7.0	23
Lake Irene	5J10	4/27	68	18.1	23.0	24.3	23
Arrow	5K6	4/27	37	10.8	8.2	7.8	23
Lapland	5K7	4/27	31	7.9	3.3	9.1	23
Fremont Pass	6K8	4/26	51	16.0	19.2	18.6	25
Lynx Pass	6K6	4/26	32	10.5	2.8	7.5	25
Shrine Pass	6K9	4/27	53	19.0	20.5	18.7	19
	5K9	4/26					
Grizzly Peak		4/20	55	19.2	18.2	20.1	19
Glen Mar Ranch	6K20	4/26	26	7.0	0.0	5.1	14
Monarch Lake	5J14	4/27	18	6.1	4.9	5.9	13
Granby	5J16	4/26	10	3.6	0.0	3.2	12
Grand Lake	5J19	4/26	23	5.4	1.3	3.5	12
Berthoud Summit	5K14	5/1	60	19.8	21.7	22.5	10
Gore Pass	6J11		30	8.5	1.9	8.1	10
Frisco	6K13		15	5.2	0.9	5.8	10
Snake River	5K16		13	3.8	0.0	5.8	10
Summit Ranch	6K14	4/27	24	6.7	0.9	6.5	10
Vail Pass	6K15	4/27	44	13.5	10.8	16.9	9
Pando	6K19		23	8.9	5.0	8.7	9
Kokomo	6K18		38	13.7	14.0	11.6	9
Milner Pass	5J24		44	11.5	10.2	11.0	10
Blue River	6K21	4/27	21	5.7	2.3	_	4
Jones Pass	5K21	4/27	56		13.5	_	4
Ranch Creek	5K18	4/27	36	9.8	6.8	_	4
Vasquez Creek	5K19	4/28	37	10.7	10.9	_	4
Cooper Hill	6K23	4/28	41	10.4	16.3		2
ROARING FORK RIVER	Chan	4/20	41	10.4	10.5		2
	621	4/28	E1	20.7	75 1	17.8	25
Independence Pass Tunnel	6K4		54		15.4		
North Lost Trail	7K1	4/26	33	11.7	0.4	8.8	25
Nast	6K6	4/29	7	2.1	1.4	1.6	24
Ivanhoe	6K10		55	14.4	NS	18.8	14
McClure Pass	7K8	4/26	31	9.3	4.2	10.1	11
Lift	7K27	4/27	62		10.8	-	3
Aspen	7K22	4/27	46	15.6	16.3	-	2
PLATEAU CREEK							
Mesa Lakes	7K4	4/26	50		16.4	14.4	24
Trickle Divide	7K5	4/28	74	27.7	27.0	29.4	21
Alexander Lake *	7K3	4/29	57	21.9		22.7	24
Park Reservoir *	7K6	4/28	66	25.8		25.5	20
* On adjacent drainage							
** Courses with less than 15 year	s recor	d					
have all years prior to 1957 a							
NS No summer	0						

NS No survey

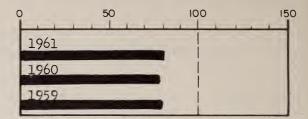
# COLORADO RIVER WATERSHED IN COLORADO



### UPPER COLORADO ABOVE GLENWOOD SPRINGS



#### LOWER COLORADO BELOW GLENWOOD SPRINGS



#### RESERVOIR STORAGE (1.000 AC. FT.)

NEOEM O				
RESERVOIR	USABLE CAPACITY	THIS YEAR	LAST YEAR	average ⊹
Granby **	465.5	214.0	236.3	185.3
Green Mt.				52:8
* 1943-57				
** Less than	15 year	rs		

\*\* Less than 15 years

MEASURED FIRST OF MONTH

#### PRECIPITATION

STATION	FALL *AVE. DEP.		ter Mar.
Upper Colorado Lower Colorado * August through No		4 4.00 5 3.43	

PRELIMINARY U.S. WEATHER BUREAU DATA AVERAGE OF SELECTED STATIONS

#### SOIL MOISTURE

Muddy Pass         8.0         6.6         8.0         4.7           Gore         7.0         0.7         6.4         6.4           Berthoud Pass         8.0         5.5         3.0         2.0           Vasquez Siphon         7.0         6.4          5.7           Ranch Creek         7.0         3.4         4.3         4.6           Vail         8.0         7.4         7.9         6.6           Blue River         7.0         0.8         3.9         2.9           Placita         8.0         6.4         7.8         6.9           Maroon         8.0         7.4         7.8         7.4           All past data         7.4         7.8         7.4					
Gore 7.0 0.7 6.4 6.4 8.0 5.5 3.0 2.0 7.4 7.9 6.6 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0			YEAR		
	Gore Berthoud Pass Vasquez Siphon Ranch Creek Vail Blue River Placita Maroon	7.0 8.0 7.0 7.0 8.0 7.0 8.0 8.0	0.7 5.5 6.4 3.4 7.4 0.8 6.4	6.4 3.0  4.3 7.9 3.9 7.8	6.4 2.0 5.7 4.6 6.9 6.9

ALL PROFILES 4 FEET DEEP

## STREAMFLOW FORECAST (1000 A.F.)

STREAM AND STATION	FOREC	AST	THIS YEAR % ERAGE	15 YEAR AVERAGE 1943-57
Blue R. abv. Green Mt. Dam		215	74	
Colo. R. nr. Granby (4) Colo. R. at Glen. Spgs (5)	-	205	87	235
Roaring Fork at Gl. Spgs (		600	75	803
Plateau nr. Collbran		45	79	1 ' 1
Williams Fk. nr Parshall		70	90	
Willow Crk ab. Willow Crk.		34	77	44

- (4) Observed flow plus diversions by Adams tunnel and Grand River ditch plus change in storage in Granby Reservoir.
- (5) Observed flow plus the changes as indicated in (4) plus Moffat Ditch.
- (6) Observed flow plus diversion through Twin Lakes tunnel.

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# YAMPA, WHITE, & NORTH PLATTE RIVERS WATERSHEDS IN COLORADO

**as of** MAY 1, 1961

# U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

#### SNOW COVER

SNOW PACK REMAINED ABOUT THE SAME OVER MOST OF THE AREA AND IS NOW ABOUT 75% OF NORMAL ON THE YAMPA AND WHITE AND NEAR NORMAL ON THE NORTH PLATTE.

#### SOIL MOISTURE

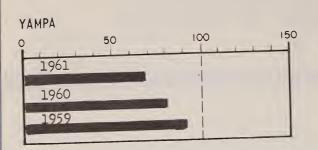
SOIL MOISTURE STATIONS ON MUDDY PASS AND NEAR HAHN'S PEAK ARE ABOVE NORMAL, WHILE STATIONS IN THE HEADWATER AREA OF THE LARAMIE AND NORTH PLATTE RIVERS ARE MUCH BELOW. COOL TEMPERATURES ON THE LARAMIE AND NORTH PLATTE BASINS HAVE REDUCED SNOW MELT. VALLEY SOILS ARE REPORTED AS FAIR OVER THE ENTIRE AREA.

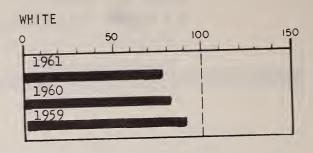
#### STREAMFLOW

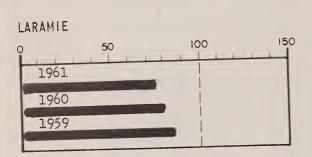
APRIL THROUGH SEPTEMBER FORECASTS IN THIS AREA WERE RAISED SLIGHTLY OVER A MONTH AGO BUT ARE STILL BELOW NORMAL. HIGHEST STREAM FORECAST IS THE WHITE WITH 87% OF NORMAL. THERE SHOULD BE NO MATERIAL SHORTAGE IN THIS AREA, HOWEVER, SOME LOCAL AND LATE SEASON SHORTAGES COULD EXIST ALONG THE YAMPA AND SNAKE.

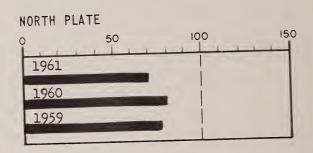
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THIS REPORT COMPILED IN COOPERATION WITH COLORADO EXPERIMENT STATION AND STATE ENGINEER OF COLORADO.









# SOIL MOISTURE

# STREAMFLOW FORECAST (1,000 A.F.)

STATION	CAPACITY (INCHES)	THIS YEAR	LAST YEAR	average *
Muddy Pass Willow Pass Two Mile Laramie Road Hahn's Peak  * All past ye ** May 1 data		6.6 1.0 1.2 0.8 7.7	8.0 6.7 3.7 6.8	4.7 4.3 3.4 4.4

STREAM AND STATION	FORECAST	THIS YEAR % AVERAGE	15 YEAR AVERAGE 1943-57
Laramie at Jelm Elk at Clark Yampa at Steamboat Spgs. White at Meeker North Platte at Northgate Little Snake at Lilly	65	57	113
	185	86	215
	220	71	283
	290	87	335
	120	47	255
	250	71	350

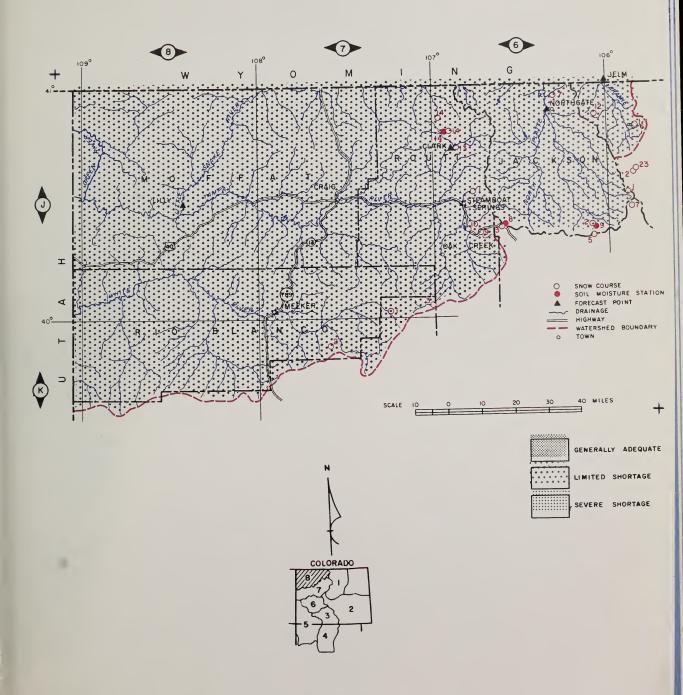
ALL PROFILES 4 FEET DEEP

# PRECIPITATION

STATION	FALL *AVE. DEP.	WINTER DECMET.		
Yampa White North Platte	5.1248 4.64 -1.76 3.2024	4.14   -1.15		

PRELIMINARY U.S. WEATHER BUREAU DATA AVERAGE OF SELECTED STATIONS \* August through November

# YAMPA, WHITE, & NORTH PLATTE RIVERS WATERSHEDS IN COLORADO



SNOW		CURRENT INFORMATION			PAST RECORD			
SNOW COURSE	NO.	DATE OF SURVEY	SNOW DEPTH	WATER	WATER CONTENT (INCHES)		YEARS OF	
		SURVET	(INCHES)	(INCHES)	LAST YEAR	AVERAGE	RECORD	
NORTH PLATTE RIVER								
Cameron Pass	5J1	4/29	78	27.5	26.0	25.6	25	
Park View	6J2	4/26	32	8.7	2.1	6.5	25	
Columbine Lodge	6J3	4/27	54	20.0	13.7	21.3	25	
Deadman Hill *	5J6	4/30	52	17.0	15.5	17.7	22	
Willow Creek Pass *	6J5	4/26	42	13.2	7.6	11.5	23	
Roach *	6J12	4/27	62	17.4	11.3	20.9	20	
Northgate	6J7	4/27	15	5.4	0.2	2.7	11	
McIntyre *	5J15	4/30	31	10.1	3.3	0.4	11	
YAMPA RIVER								
Dry Lake	6J1	4/27	42	15.4	9.6	5.2	25	
Columbine Lodge	6J3	4/27	54	20.0	13.7	21.3	25	
Elk River	6J4	4/26	40	14.3	8.8	12.8	25	
Lynx Pass *	6J6	4/26	32	10.5	2.8	7.5	25	
Rabbit Ears	6J9	4/27	73	25.4	28.0	28.9	8	
Yampa View	6J10	4/27	29	9.9	6.1	10.2	10	
Bear River	7J3	4/28	24	8.3	1.2	8.9	5	
Clark	6J13	4/24	12	4.0	0.0	4.5	5	
Hahn's Peak	6J14	4/26	25	9.0			-	
WHITE RIVER							ì	
Burro Mountain	7K2	4/25	45	15.5	17.0	14.6	25	
Rio Blanco	7J1	4/26	34	12.6	1.0	10.2	25	
		į						
* On adjacent drainage								
NS No Survey								

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# TIRST CLASS WALL

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